CARICEC Workshop

“Air Quality Issues With Stationary Engines”

Martin Kay
Air Quality Analysis & Compliance Supervisor
South Coast Air Quality Management District
909.396.3115 mkay@aqmd.gov

SCAQMD Background

- Local air district for Southern California

SCAQMD Background

- 14 million people, and growing
- Local air quality is improved but still exceeds ozone and particulate matter standards
- Attainment of standards projected for 2010

SCAQMD New Source Review Requirements

- Best Available Control Technology (BACT or LAER)
  - Clean fuels (natural gas, methanol or propane)
  - Lowest achievable emission limits
- Emission offsets for facilities with NOx, VOC or PM > 4 tpy

SCAQMD BACT for Non-Emergency ICEs <2064 HP

- NOx: 0.15 grams/Bhp-hr
- HC: 0.15 grams/Bhp-hr
- CO: 0.60 grams/Bhp-hr
- Clean fuels
- Achievable with rich-burn engines and 3-way catalyst

SCAQMD BACT for Non-Emergency ICEs ≥2064 HP

- NOx:
  21 ppm @ 15% O2 x efficiency/33%
- CO: 33 ppm @ 15% O2
- PM10: 0.045 grams/Bhp-hr
- Clean fuels
- Achievable with SCR and oxidation catalyst

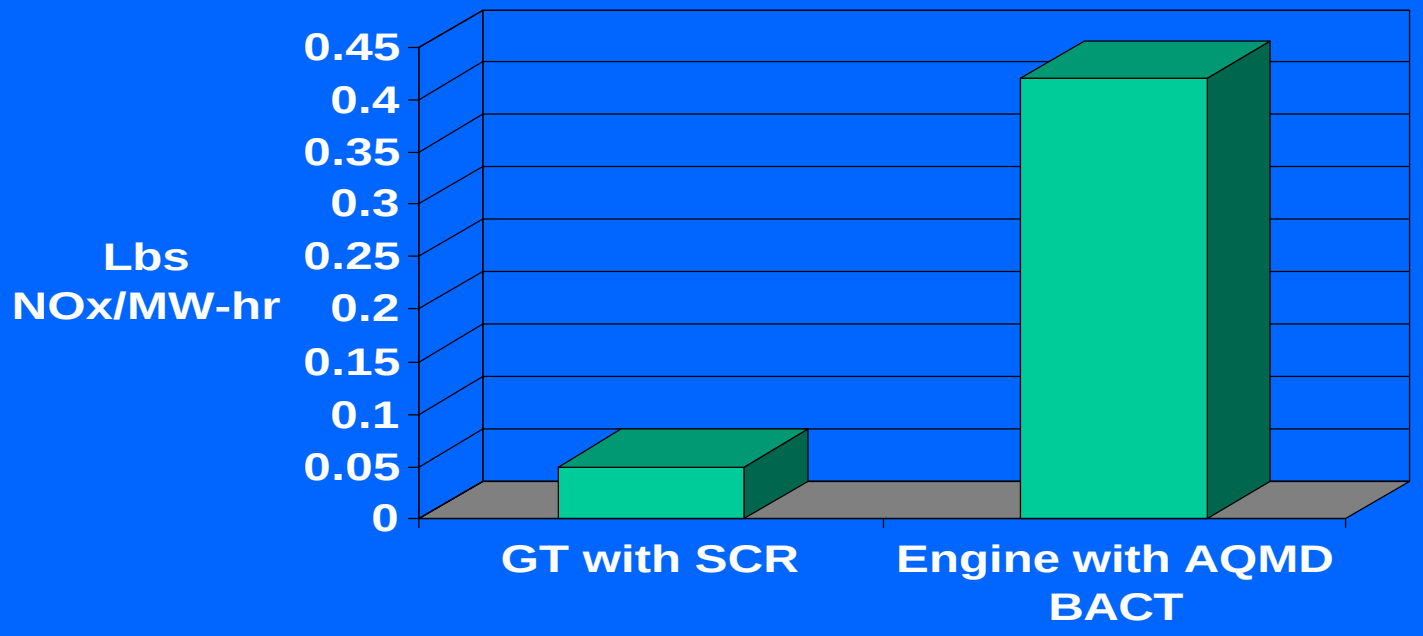
SCAQMD BACT Requirements for Emergency Diesel ICEs

- NOx: 6.9 grams/Bhp-hr
- HC: 1.0 grams/Bhp-hr
- CO: 8.5 grams/Bhp-hr

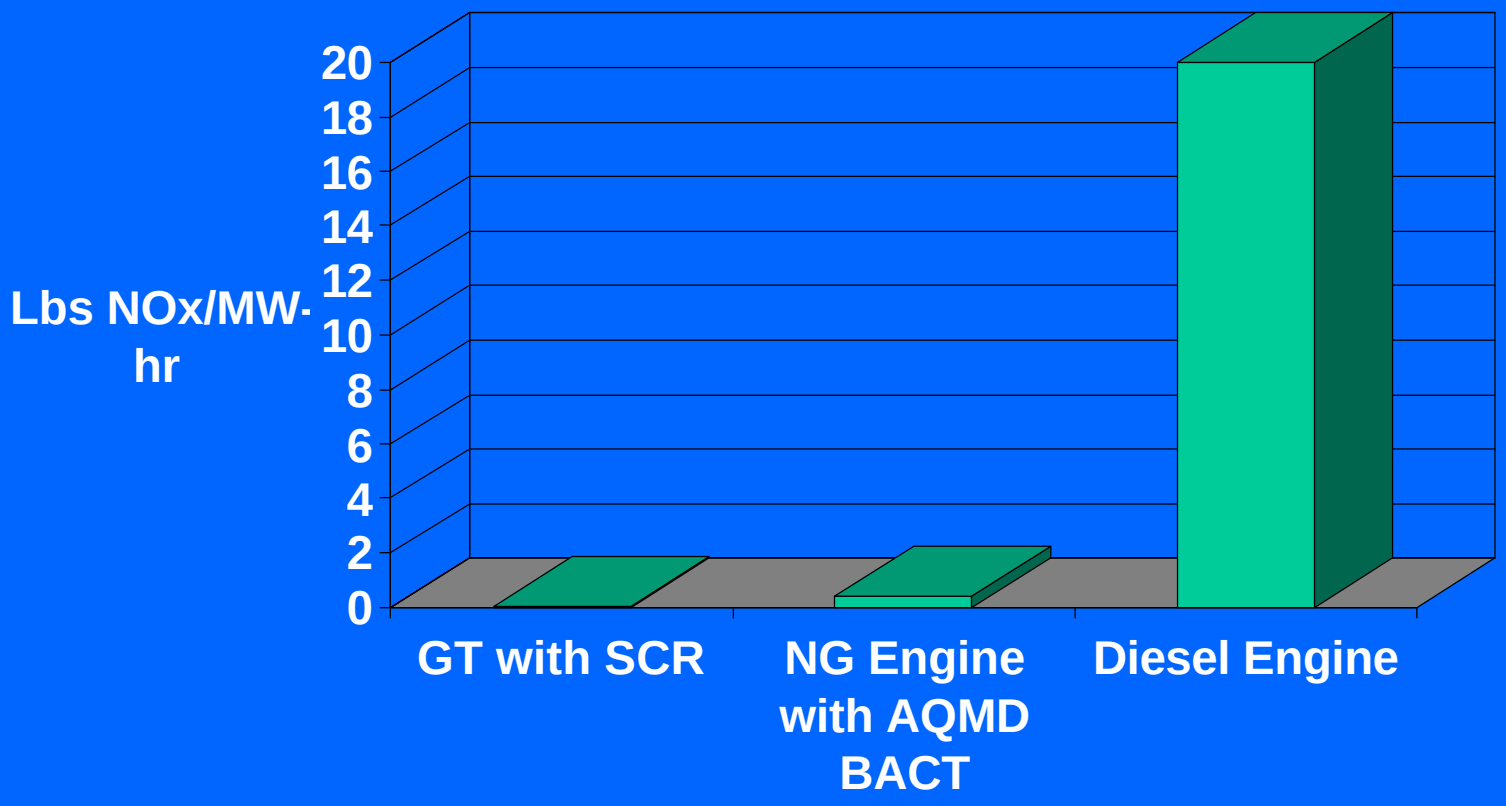
} EPA Non-Road

- SOx: < 0.05% by weight fuel sulfur content
- Maximum of 200 hours/year

Natural Gas Firing: Gas Turbine vs. Engine



Diesel vs. Natural Gas



CARB DG Workgroup

- Senate Bill 1298: H&SC 41514.9
- Requires DG to be as clean as central station powerplants with BACT
- CARB NOx proposal:

	2003	2007
lbs/mW-hr	0.5	0.05
gr/Bhp-hr)	0.17	0.017

- SCAQMD supports CARB's efforts

Concerns with IC Engines

- Highest emissions of all electric generators
- Health risk impact of diesel particulate
- Reliability: Less monitoring, source testing and operator attention
- Smaller generators may escape permitting requirements and emissions offsets